

10/521,781

VII. The monomer charge, the amounts of catalyst components, and the properties of the resultant syndiotactic 1,2-polybutadiene produced in each example are summarized in Table VII.

DETD In Examples 46-52, the procedure in Example 1 was repeated except that iron(III) acetylacetone was substituted for iron(II) 2-ethylhexanoate, and triethylaluminum was substituted for triisobutylaluminum, having the catalyst ratio varied as shown in Table VIII. The monomer charge, the amounts of catalyst components, and the properties of the resultant syndiotactic 1,2-polybutadiene produced in each example are summarized in Table VIII. ^{1H} and ^{13C} NMR analysis of the polymer produced in Example 48 indicated a 1,2-linkage content of 84.6% and a syndiotacticity of 74.5%.

DETD In Examples 53-58, the procedure in Example 1 was repeated except that iron(III) acetylacetone was substituted for iron(II) 2-ethylhexanoate, dineopentyl hydrogen phosphite was substituted for bis(2-ethylhexyl) hydrogen phosphite, and triethylaluminum was substituted for triisobutylaluminum, having the catalyst ratio varied as shown in Table IX. The monomer charge, the amounts of catalyst components, and the properties of the resultant syndiotactic 1,2-polybutadiene produced in each example are summarized in Table IX.

DETD Inside a glovebox operated under a nitrogen atmosphere, 32.4 mg (0.20 mmol) of anhydrous iron(III) chloride powder was charged to into an oven-dried 1-liter glass bottle. The bottle was capped with a self-sealing rubber liner and a perforated metal cap and then removed from the glovebox. The bottle was charged with 132 g of hexanes and 368 g of a 1,3-butadiene/hexanes blend containing 27.2% by weight of 1,3-butadiene, followed by 0.80 mmol of bis(2-ethylhexyl) hydrogen phosphite and 2.80 mmol of triisobutylaluminum. The bottle was tumbled for 4 hours in a water bath maintained at 50° C. Workup of the polymerization mixture in a manner similar to that described in Example 1 gave 37.2 g (37% yield) of the polymer. As measured by DSC, the polymer had a melting temperature of 168° C. As determined by GPC, the polymer had a weight average molecular weight (M.sub.w) of 871,000, a number average molecular weight (M.sub.n) of 329,000, and a polydispersity index (M.sub.w/M.sub.n) of 2.6.

CLM What is claimed is:

8. The catalyst composition of claim 3, wherein (b) and (c) are combined in the presence of 1,3-butadiene monomer.

9. A catalyst composition for homopolymerizing conjugated dienes, the catalyst composition is formed by a process comprising the step of combining: (a) an iron-containing compound; (b) a dihydrocarbyl hydrogen phosphite; and (c) an organoaluminum compound; wherein at least two of the components (a), (b), and (c) are combined in the presence of conjugated diene monomer, and wherein the molar ratio of the organo aluminum compound to the iron-containing compound is equal to or greater than 12:1.

=> d his full

(FILE 'HOME' ENTERED AT 20:16:30 ON 05 SEP 2005)
SET ABBR ON PERM
SET PLURALS ON PERM

FILE 'USPATFULL, USPAT2, CAPLUS, JAPIO' ENTERED AT 20:16:51 ON 05 SEP 2005

L1 330 SEA ABB=ON PLU=ON COBALT### AND (ISOBUTYL OR ISOPROPYL OR CYCLOHEXYL OR CYCLOPENTYL) (2A) (PHOSPHINE OR PHOSPHITE)

L2 145051 SEA ABB=ON PLU=ON L1 AND BUTADIENE OR DIENE

L3 305330 SEA ABB=ON PLU=ON BUTADIENE# OR POLYBUTADIENE#

L4 89 SEA ABB=ON PLU=ON L1 AND L3

L5 5 SEA ABB=ON PLU=ON L4 AND (ORGAN### OR ALKYL) (1A) ALUMINUM
D L5 1-5 IBIB ABS

D L5 5 HIT

FILE HOME

FILE USPATFULL

FILE COVERS 1971 TO PATENT PUBLICATION DATE: 1 Sep 2005 (20050901/PD)
FILE LAST UPDATED: 1 Sep 2005 (20050901/ED)
HIGHEST GRANTED PATENT NUMBER: US6938271
HIGHEST APPLICATION PUBLICATION NUMBER: US2005193458
CA INDEXING IS CURRENT THROUGH 1 Sep 2005 (20050901/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 1 Sep 2005 (20050901/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2005
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Jun 2005

>>> USPAT2 is now available. USPATFULL contains full text of the <<<
>>> original, i.e., the earliest published granted patents or <<<
>>> applications. USPAT2 contains full text of the latest US <<<
>>> publications, starting in 2001, for the inventions covered in <<<
>>> USPATFULL. A USPATFULL record contains not only the original <<<
>>> published document but also a list of any subsequent <<<
>>> publications. The publication number, patent kind code, and <<<
>>> publication date for all the US publications for an invention <<<
>>> are displayed in the PI (Patent Information) field of USPATFULL <<<
>>> records and may be searched in standard search fields, e.g., /PN, <<<
>>> /PK, etc. <<<

>>> USPATFULL and USPAT2 can be accessed and searched together <<<
>>> through the new cluster USPATALL. Type FILE USPATALL to <<<
>>> enter this cluster. <<<
>>>
>>> Use USPATALL when searching terms such as patent assignees, <<<
>>> classifications, or claims, that may potentially change from <<<
>>> the earliest to the latest publication. <<<

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE USPAT2

FILE COVERS 2001 TO PUBLICATION DATE: 1 Sep 2005 (20050901/PD)
FILE LAST UPDATED: 1 Sep 2005 (20050901/ED)
HIGHEST GRANTED PATENT NUMBER: US2005139861
HIGHEST APPLICATION PUBLICATION NUMBER: US2005193458
CA INDEXING IS CURRENT THROUGH 1 Sep 2005 (20050901/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 1 Sep 2005 (20050901/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2005
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Jun 2005

USPAT2 is a companion file to USPATFULL. USPAT2 contains full text of the latest US publications, starting in 2001, for the inventions covered in USPATFULL. USPATFULL contains full text of the original published US patents from 1971 to date and the original applications from 2001. In addition, a USPATFULL record for an invention contains a complete list of publications that may be searched in standard search fields, e.g., /PN, /PK, etc.

USPATFULL and USPAT2 can be accessed and searched together through the new cluster USPATALL. Type FILE USPATALL to enter this cluster.

Use USPATALL when searching terms such as patent assignees, classifications, or claims, that may potentially change from the earliest to the latest publication.

FILE CAPLUS

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 5 Sep 2005 VOL 143 ISS 11
FILE LAST UPDATED: 4 Sep 2005 (20050904/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE JAPIO
FILE LAST UPDATED: 5 SEP 2005 <20050905/UP>
FILE COVERS APR 1973 TO APRIL 28, 2005

<<< GRAPHIC IMAGES AVAILABLE >>>

=> d his

(FILE 'HOME' ENTERED AT 20:16:30 ON 05 SEP 2005)
SET ABBR ON PERM
SET PLURALS ON PERM

FILE 'USPATFULL, USPAT2, CAPLUS, JAPIO' ENTERED AT 20:16:51 ON 05 SEP 2005
L1 330 S COBALT### AND (ISOBUTYL OR ISOPROPYL OR CYCLOHEXYL OR CYCLOPE
L2 145051 S L1 AND BUTADIENE OR DIENE
L3 305330 S BUTADIENE# OR POLYBUTADIENE#
L4 89 S L1 AND L3
L5 5 S L4 AND (ORGAN### OR ALKYL) (1A)ALUMINUM

=> log y
COST IN U.S. DOLLARS SINCE FILE TOTAL
ENTRY SESSION
FULL ESTIMATED COST 53.21 53.42

STN INTERNATIONAL LOGOFF AT 20:25:14 ON 05 SEP 2005

WEST Search History

DATE: Monday, September 05, 2005

Hide? Set Name Query Hit Count

DB=PGPB,USPT; PLUR=YES; OP=OR

<input type="checkbox"/>	L2	(526/171)![CCLS]	438
<input type="checkbox"/>	L1	(526/139)![CCLS]	440

END OF SEARCH HISTORY